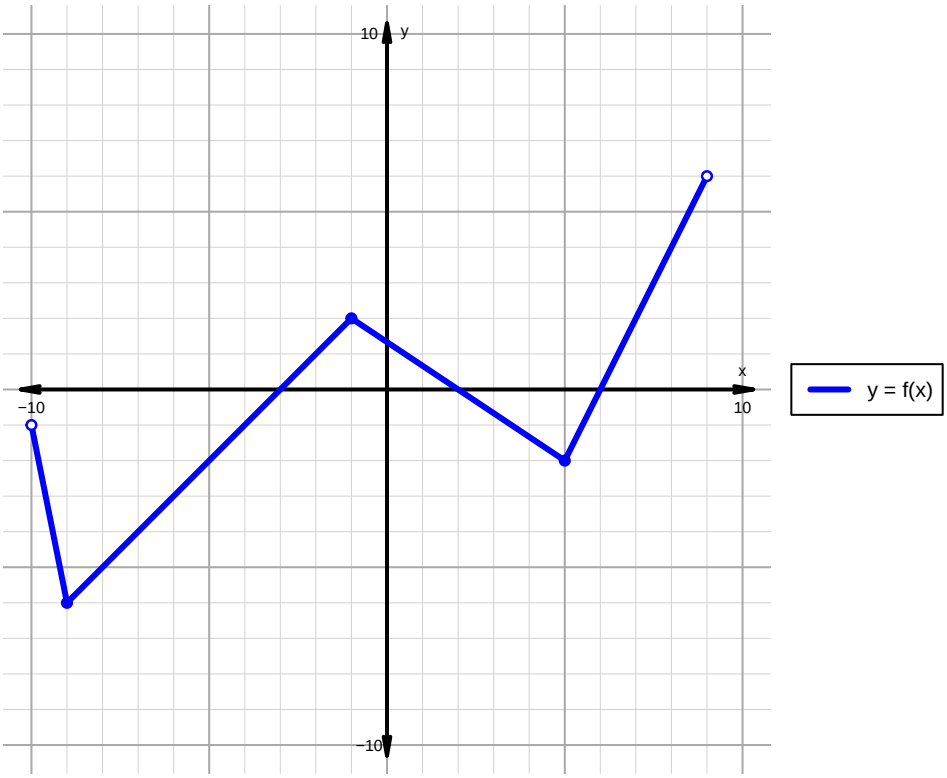
Name: Date:

Intervals, Transformations, and Slope Solution (version 105)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-3, 2) \cup (6, 9)$
Negative	$(-10, -3) \cup (2, 6)$
Increasing	$(-9, -1) \cup (5, 9)$
Decreasing	$(-10, -9) \cup (-1, 5)$
Domain	$(-10, 9)$
Range	$(-6, 6)$

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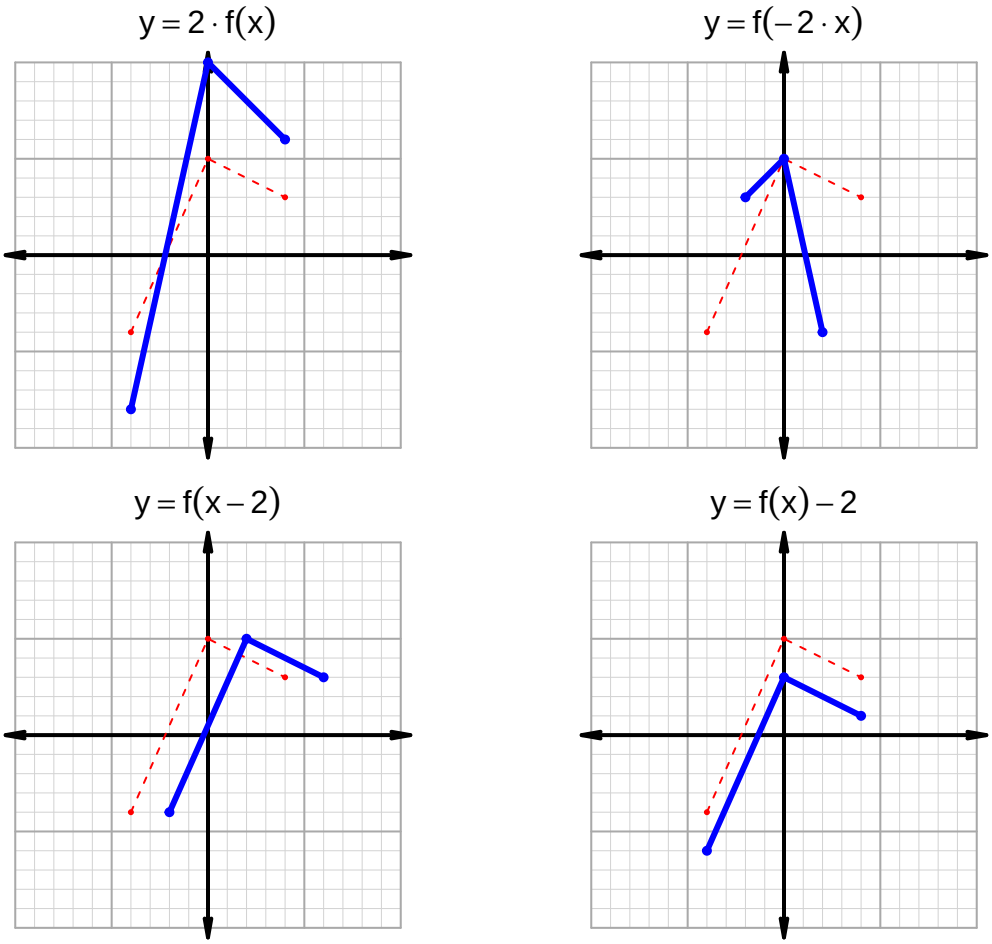
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 17$ and $x_2 = 73$. Express your answer as a reduced fraction.

x	$g(x)$
17	36
36	73
52	17
73	52

$\frac{f(73)-f(17)}{73-17} = \frac{52-36}{73-17} = \frac{16}{56}$

The greatest common factor of 16 and 56 is 8. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{2}{7}$$